EPA United States
Environmental Protection
Agency

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Revision: ___NA___ RCRA ID: ___NA___

Author: ___Tetra Tech___ Project Manager: ___Robert Egan___

Date QAPP Submitted: ___NA___ Date Review Requested: ___9/14/17___

Date Review Completed: ___9/14/17___ Reviewed by: ___

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Major (X) and/or minor (O) deficiencies, defined here as the absence of relevant or incomplete information, were found in the following elements:

- Title & Approval Sheet
- Table of Contents
- Distribution List
- Project/Task Organization
- Problem Definition/Background
- Project/Task Description
- Data Quality Objectives
- Special Training/Certification
- Documentation & Records
- Sampling Process Design
- Sampling Method
- Sample Handling

- Analytical Methods
- Quality Control
- Instrument/Equipment Testing
- Instrument Calibration & Frequency
- Inspection/Acceptance for Supplies
- Data Acquisition (Non-Direct)
- Data Management
- Assessments & Response Actions
- Reports to Management
- Data Review, Validation, & Verification
- Validation and Verification Methods
- Reconciliation with User Requirements

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◯Acceptable   ◯Acceptable with minor revisions   ◯Unacceptable with major revisions

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This is a general review of the Tetra Tech START IV contract QAPP, in relation to its applicability to the Tower Standard Site remediation work. The purpose of this review is to identify project-specific elements not included in the START IV QAPP that will be needed in a QAPP addendum or work plan. Please see in-line comments on the following pages.

EPA Region 5 RCRA Corrective Action QAPP Checklist - October 2016

IA = Included & Acceptable NI = Not Included IU = Included & Unacceptable NA = Not Applicable	IA	IU	NI	NA	Comments
A1. Title & Approval Sheet					
Project title	O	O	O	⊙	Project-specific. Should be included in
Organization's name	O	O	O	⊙	Project-specific. Should be included in
Effective date and/or version identifier	O	O	O	⊙	Project-specific. Should be included in
Dated signature of Organization's project manager	O	O	O	⊙	Project-specific. Should be included in WP/QA addendum.
Dated signature of Organization's QA manager	O	O	O	⊙	Project-specific. Should be included in
Other signatures, as needed (e.g., GLNPO Project Officer, GLNPO QA Manager)	O	O	O	⊙	Project-specific. Should be included in WP/QA addendum. EPA project lead, Tetra
A2. Table of Contents	O	O	O	⊙	Project-specific. Should be included in
A3. Distribution List					
Includes all individuals who are to implement or otherwise receive the QAPP and identifies their organization	O	O	O	⊙	Mostly blank in the START IV QAPP. Needs to be filled out with project-relevant personnel.
A4. Project/Task Organization					
Identifies key individuals with their responsibilities (e.g., data users, decision makers, project QA manager, Subcontractors, etc.)	O	O	O	⊙	Project-specific.
Organization chart shows lines of authority & reporting responsibilities	O	O	O	⊙	Project-specific.
Project QA manager position indicates independence from unit collecting/using data	⊙	O	O	O	QA personnel for Tetra Tech and EPA are otherwise independent of project.
A5. Problem Definition/Background					
Clearly states problem to be resolved, decision to be made, or hypothesis to be tested	O	O	O	⊙	Project-specific.
Historical & background information	O	O	O	⊙	Project-specific.
Cites applicable technical, regulatory, or program-specific quality standards, criteria, or objectives	O	O	O	⊙	Project-specific.
A6. Project/Task Description					
List measurements to be made/data to obtain	O	O	O	⊙	Project-specific.
Notes special personnel or equipment requirements	O	O	O	⊙	Project-specific.
Provides work schedule	O	O	O	⊙	Project-specific.
A7. Quality Objectives & Criteria for Measurement Data					
States project objectives and limits, both qualitatively & quantitatively	O	O	O	⊙	Project-specific.
States & characterizes measurement quality objectives as to applicable action levels or criteria	O	O	O	⊙	In START IV QAPP, MQOs are listed as per the CLP program and state that 'subcontract labs may have alternate standards.' If this is the case the subcontract lab's MQOs and
A8. Special Training Requirements/Certifications	O	O	O	⊙	Project-specific.
A9. Documentation & Records					
Lists information & records to be included in data report (e.g., raw data, field logs, results of QC checks, problems encountered)	O	O	O	⊙	Project-specific.
Notes required project & QA records/reports	O	O	O	⊙	Project-specific.
Gives retention time and location for records and reports	⊙	O	O	O	Location of records specified in START IV QAPP. Retention time is 10 years unless

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B1. Sampling Process Design (Experimental Design)					
Types and number of samples required	O	O	O	⊙	Project-specific.
Sampling network design & rationale for design	O	O	O	⊙	Project-specific.
Sampling locations & frequency of sampling	O	O	O	⊙	Project-specific.
Sample matrices	O	O	O	⊙	Project-specific.
Classification of each measurement parameter as either critical or needed for information only	O	O	O	⊙	Project-specific.
Validation study information, for non-standard situations	O	O	O	⊙	Project-specific.
B2. Sampling Method Requirements					
Identifies sample collection procedures & methods	O	O	O	⊙	Project-specific.
Lists equipment needs	O	O	O	⊙	Project-specific.
Identifies support facilities	O	O	O	⊙	Project-specific.
Identifies individuals responsible for corrective action	O	O	O	⊙	Project-specific.
B3. Sample Handling & Custody Requirements					
Notes sample handling requirements	O	⊙	O	O	Adequate description of sample handling in
Notes chain of custody procedures, if required	⊙	O	O	O	Adequate COC information in START IV
B4. Analytical Methods Requirements					
Identifies analytical methods to be followed (with all options) & required equipment	O	O	O	⊙	START IV QAPP too vague, will need to be elaborated on with the lab's methods and
Specifies any specific method performance criteria	O	O	O	⊙	START IV QAPP too vague, will need to be elaborated on with the lab's methods and
States requested lab turnaround time	O	O	O	⊙	Project-specific.
Provides validation information for non-standard methods	O	O	O	⊙	Project-specific.
Identifies procedures to follow when failures occur	O	O	O	⊙	Laboratory-specific.
Identifies individuals responsible for corrective action and appropriate documentation	O	O	O	⊙	Laboratory-specific.
B5. Quality Control Requirements					
Identifies QC procedures & frequency for each sampling analysis, or measurement technique, as well as associated acceptance criteria and corrective action	O	⊙	O	O	Laboratory QC samples are discussed relative to CLP requirements; if subcontract lab is to be used, they should verify compliance with these requirements or provide their own QC sample procedures.
References procedures used to calculate QC statistics (e.g., precision, bias, accuracy)	O	⊙	O	O	Precision and accuracy appropriately defined. Bias, completeness, etc are
B6. Instrument/Equipment Testing, Inspection, and Maintenance Requirements					
Identifies acceptance testing of sampling and measurement systems	⊙	O	O	O	Any deviations in Worksheet 22 from the START IV QAPP should be noted in the

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B7. Instrument Calibration & Frequency					
Identifies equipment needing calibration and frequency for such calibration	◉	○	○	○	See B.6 comment. Deviations should be noted.
Notes required calibration standards and/or equipment	◉	○	○	○	See B.6 comment. Deviations should be noted.
Cites calibration records & manner traceable to equipment	◉	○	○	○	See B.6 comment. Deviations should be noted.
B8. Inspection/Acceptance Requirements for Supplies & Consumables					
States acceptance criteria for supplies & consumables	◉	○	○	○	Adequate.
Notes responsible individuals	◉	○	○	○	Field team leaders.
B9. Data Acquisition Requirements for Non-Direct Measurements					
Identifies type of data needed from non-measurement sources (e.g., computer databases and literature files), along with acceptance criteria for their use	○	○	○	◉	Project-specific.
Describes any limitations of such data	○	○	○	◉	Project-specific.
B10. Data Management					
Describes standard record keeping & data storage and retrieval requirements	◉	○	○	○	Adequate.
Checklist or standard forms attached to QAPP	○	○	◉	○	Include any relevant to project in
Describes data handling equipment & procedures used to process, compile and analyze data (e.g., required computer hardware & software)	◉	○	○	○	Adequate.

	IA	IU	NI	NA	Comments
C1. Assessments & Response Actions					
Lists required number, frequency, & type of assessments, with approximate date & names of responsible personnel	○	○	○	◉	Project-specific.
Identifies individuals responsible for corrective actions	○	○	○	◉	Project-specific.
C2. Reports to Management					
Identifies the preparer and recipients of reports	○	○	○	◉	Project-specific.
Identifies frequency and distribution of reports for:					
Project status	○	○	○	◉	Project-specific.
Results of performance evaluations & audits	○	○	○	◉	Project-specific.
Results of periodic data quality assessments	○	○	○	◉	Project-specific.
Any significant QA problems	○	○	○	◉	Project-specific.

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D1. Data Review, Validation, & Verification					
States criteria for accepting, rejecting, or qualifying data	⊙	○	○	○	Worksheets 35 and 36.
Includes project-specific calculations or algorithms	○	○	○	⊙	Project-specific.
D2. Validation and Verification Methods					
Describes process for data validation and verification	⊙	○	○	○	If validation is to be done, procedure in START IV QAPP is sufficient.
Identifies issue resolution procedure and responsible individuals	○	○	○	⊙	Project-specific.
Identifies method for conveying these results to data users	⊙	○	○	○	If validation is to be done, procedure in START IV QAPP is sufficient.
D3. Reconciliation with User Requirements					
Describes process for reconciling with DQOs and reporting limitations on use of data	⊙	○	○	○	Worksheet 37 for process, but DQOs used are project-specific.